Federal Board SSC-I Examination
Biology Model Question Paper

Curriculum 2022-2023 (Inclusive Scheme of Studies 2024)

Section - A (Marks 12)

Time Allowed: 20 minutes

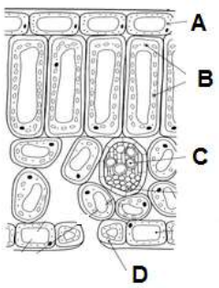
Section – A is compulsory. All parts of this section are to be answered on this page and handed over to the Centre Superintendent. Deleting/ overwriting is not allowed. *Do not use lead pencil.*

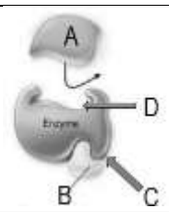
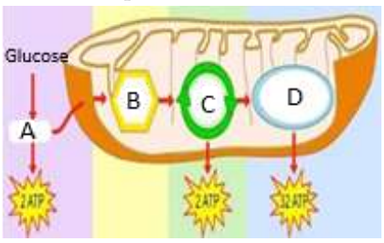
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Candidate Sign._____ **Invigilator Sign**. _____

Q1. **Fill the relevant bubble against each question**. **Each part carries one mark.**

S #	Question	(A)	(B)	(C)	(D)	(A)	(B)	(C)	(D)
(i)	Which of the following organelle is NOT present in plant cell?	Centriole	Golgi body	Mitochondria	Ribosomes	○	○	○	○
(ii)	The statement on the basis of observations is called:	Hypothesis	Deduction	Theory	Law	○	○	○	○
(iii)	Identify the correctly matched pair in a cell cycle.	G_1- Preparation for cell division	G_2 - Increase in cell size	S-DNA replication	G_0 – Cell divides into two	○	○	○	○
(iv)	The scientific study of organisms and their evolutionary relationship is called:	Classification	Taxonomy	Systematics	Binomial nomenclature	○	○	○	○
(v)	The diagram shows cells in part of the leaf of a green plant. Which  region contains cells which are responsible for the transport of water?	A	B	C	D	○	○	○	○
(vi)	Non-competitive inhibitors inactivate the enzyme. Identify non-competitive inhibitor in this figure.	A	B	C	D	○	○	○	○

						
(vii)	If tissue level is not developed in the level of organization, which next level will not form?	Molecular level	Atomic level	Organ level	Organelle level	○ ○ ○ ○
(viii)	Which combination of molecules is related to lipids?	Amino acid and glycerol	Glucose and glycerol	Fatty acids and glycerol	Glucose and fatty acids	○ ○ ○ ○
(ix)	Which one of the following is NOT the part of embryo in a seed?	Radicle	Plumule	Endosperm	Cotyledon	○ ○ ○ ○
(x)	The diagram shows an overview of aerobic respiration.  In which labelled process oxygen is used?	A	B	C	D	○ ○ ○ ○
(xi)	The example of vestigial organ is:	Wing of a bird	Flipper of a whale	Arm of man	Appendix in human	○ ○ ○ ○
(xii)	The nitrogenous bases between two DNA strands are held together by:	Ionic Bonds	Hydrogen Bonds	Covalent Bonds	Peptide Bonds	○ ○ ○ ○

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Model Question Paper Biology

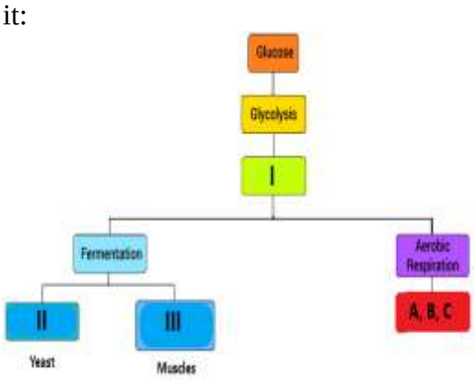
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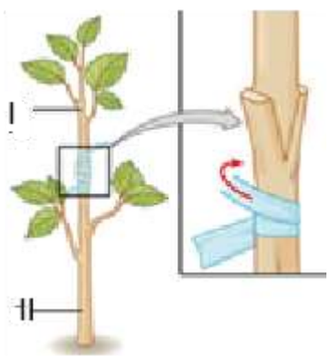
Time allowed: 2.40 hours | Total Marks: 48

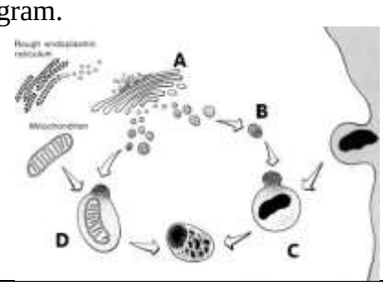
Note: Answer all parts from Section 'B' and all questions from Section 'C' on the **E-sheet**. Write your answers on the allotted /given spaces.

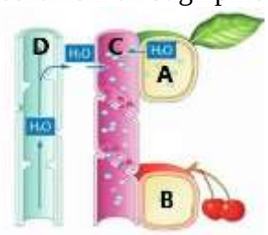
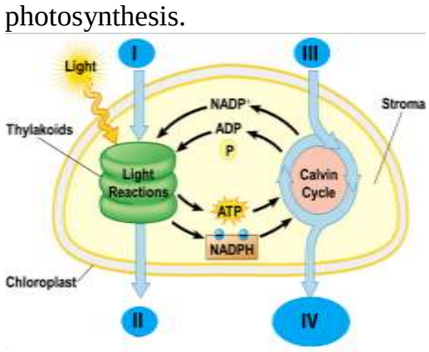
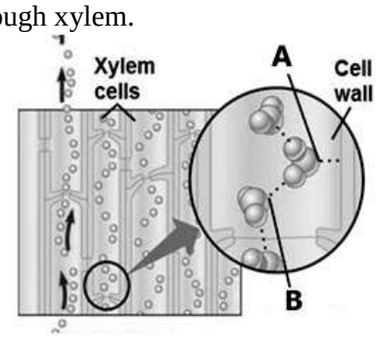
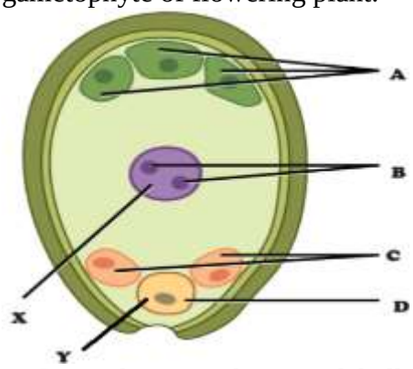
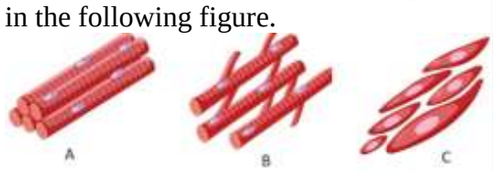
SECTION–B (Marks 30)

Q.2 Attempt the following questions **(10x3 = 30)**

<table>
<tr><th>Q#</th><th>Question</th><th>Marks</th><th></th><th>Question</th><th>Marks</th></tr>
<tr><td>(i)</td><td>Complete the following table by matching the branch of biology with the aspect of living things it describes.
<table>
<tr><th>Branch of biology</th><th>Aspect of living things described</th></tr>
<tr><td>Pharmacology</td><td></td></tr>
<tr><td></td><td>Defense against pathogens</td></tr>
<tr><td>Physiology</td><td></td></tr>
<tr><td></td><td>Classification and naming</td></tr>
<tr><td></td><td>Relations between organisms and environment</td></tr>
<tr><td>Pathology</td><td></td></tr>
</table></td><td>0.5x6</td><td>OR</td><td>Show the complete taxonomic classification of human beings.</td><td>3</td></tr>
<tr><td>(ii)</td><td>The given flow chart illustrates the cellular respiration. Answer the questions related to it:


<table>
<tr><th>(a) Name the phases of aerobic respiration</th><th>(b) Label the products</th></tr>
<tr><td>A.</td><td>I</td></tr>
<tr><td>B.</td><td>II</td></tr>
<tr><td>C.</td><td>III</td></tr>
</table></td><td>0.5x6</td><td>OR</td><td>A method of vegetative propagation in plants is shown here.


a. Name the parts labelled as I and II.
b. Name the type of vegetative propagation shown and its benefits.
c. Give any two examples of plants in which this method is applied.</td><td>1+1
+1</td></tr>
<tr><td>(iii)</td><td>Compare DNA and RNA in a tabular manner for any six features</td><td>0.5x6</td><td>OR</td><td>Draw the chemical structure of a typical amino acid labelling its components.</td><td>3</td></tr>
<tr><td>(iv)</td><td>Describe the role of ATP as energy currency for living systems.</td><td>3</td><td>OR</td><td>List the key points of Darwin's theory of natural selection.</td><td>3</td></tr>
<tr><td>(v)</td><td>Complete the following table for union of biology with other sciences.
<table>
<tr><th>Interdisciplinary science</th><th>Aspect of living organisms</th></tr>
<tr><td></td><td>Analysis of data related to organisms</td></tr>
<tr><td>Biochemistry</td><td></td></tr>
</table></td><td>0.5x6</td><td>OR</td><td>Carefully observe the following diagram.

</td><td>1+2</td></tr>
</table>

		Cost and benefit analysis of organisms			a. Correctly name the organelles A and B. b. Name and define the processes labelled as C and D.	
		Computational biology				
		Distribution of organisms in geographic regions				
		Biophysics				
(vi)	The diagram shows pressure flow mechanism through phloem.  a. Name the parts labelled as A, B, C and D. b. Name the carbohydrates that is mainly transported through C.		2+1	**OR**	The diagram shows an overview of photosynthesis.  Write the names of molecules shown as I, II, III and IV and mention which one is organic?	2+1
(vii)	Why multiple organs are needed to develop an organ system?		3	**OR**	The figure given below shows part of the mechanism for the movement of water through xylem.  a. Identify forces A and B. b. Despite the gravitational force, how the upward movement of water takes place through xylem.	1+2
(viii)	List the osmotic adaptations found in hydrophytes.		3	**OR**	How cytokinesis takes place in plant cell?	03
(ix)	Following is the diagram of female gametophyte of flowering plant.  a. Correctly name the parts labelled as A, B, C and D. b. What is the fate of X and Y after fertilization?		2+1	**OR**	Three types of muscle cells are depicted in the following figure.  a. Correctly name the types of cells labeled as A, B and C. b. Mention the location of these cell types in the body.	1.5 + 1.5
(x)	Give any three sources of variation that can lead to evolution.		3	OR	Name three distinct domains of living organisms with one distinguishing feature of each?	3

SECTION– C(Marks18) $(3x6 = 18)$

Note: Attempt all questions. Marks of all question are equal.

Q.3	How biological method may help to find the cause of any infectious disease using different steps of biological method.	6	**OR**	Describe different steps of karyokinesis in mitosis with the help of diagrams.	6
Q.4	Describe structure of enzymes. Explain the role of cofactors and give types of cofactors with examples.	2+1 +3	**OR**	Describe the internal structure of a typical leaf focusing on all tissue types found in it. Also draw its diagram.	5+1
Q.5	Describe structural advantages of any two animal and two plant cells.	1.5x 4	**OR**	Compare vegetative propagation and artificial propagation. Which one is better for rapid propagation? Give reasons.	4+2